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DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

RIN 0648-XE473

Takes of Marine Mammals Incidental to Specified Activities; Taking Marine Mammals Incidental to an Anchor Retrieval Program in the Chukchi and Beaufort Seas

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Notice; issuance of an incidental take authorization (IHA).

SUMMARY: In accordance with regulations implementing the Marine Mammal Protection Act (MMPA) as amended, notification is hereby given that NMFS has issued an IHA to Fairweather, LLC (Fairweather) to take, by harassment, small numbers of 12 species of marine mammals incidental to an anchor retrieval program in the Chukchi and Beaufort seas, Alaska, during the open-water season of 2016.

DATES: This authorization is effective from July 1, 2016 through October 31, 2016.

FOR FURTHER INFORMATION CONTACT: Shane Guan, Office of Protected Resources, NMFS, (301) 427-8401.

SUPPLEMENTARY INFORMATION:

Background

Sections 101(a)(5)(A) and (D) of the MMPA (16 U.S.C. 1361 *et seq.*) direct the Secretary of Commerce to allow, upon request, the incidental, but not intentional, taking of small numbers of marine mammals by U.S. citizens who engage in a specified activity (other than commercial fishing) within a specified geographical region if certain findings are made and either regulations

are issued or, if the taking is limited to harassment, a notice of a proposed authorization is provided to the public for review.

An authorization for incidental takings shall be granted if NMFS finds that the taking will have a negligible impact on the species or stock(s), will not have an unmitigable adverse impact on the availability of the species or stock(s) for subsistence uses (where relevant), and if the permissible methods of taking and requirements pertaining to the mitigation, monitoring, and reporting of such takings are set forth. NMFS has defined “negligible impact” in 50 CFR 216.103 as “an impact resulting from the specified activity that cannot be reasonably expected to, and is not reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival.”

Section 101(a)(5)(D) of the MMPA established an expedited process by which citizens of the United States can apply for an authorization to incidentally take small numbers of marine mammals by harassment. Section 101(a)(5)(D) of the MMPA establishes a 45-day time limit for NMFS’s review of an application followed by a 30-day public notice and comment period on any proposed authorizations for the incidental harassment of small numbers of marine mammals. Within 45 days of the close of the public comment period, NMFS must either issue or deny the authorization.

Except with respect to certain activities not pertinent here, the MMPA defines “harassment” as any act of pursuit, torment, or annoyance which (i) has the potential to injure a marine mammal or marine mammal stock in the wild [Level A harassment]; or (ii) has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering [Level B harassment].

Summary of Request

On February 2, 2016, NMFS received an application from Fairweather for the taking of marine mammals incidental to conducting anchor retrieval activities in the U.S. Chukchi and Beaufort seas. After receiving NMFS comments, Fairweather made revisions and updated its IHA application and marine mammal mitigation and monitoring plan on February 8, 2016. NMFS determined the IHA application adequate and complete on February 8, 2016. NMFS published a notice making preliminary determinations and proposing to issue an IHA on May 19, 2016 (81 FR 31594). The notice initiated a 30-day comment period.

Fairweather proposes to retrieve anchor equipment left by Shell Offshore, Inc. (Shell) during its 2012 and 2015 exploration drilling programs in the U.S. Chukchi and Beaufort seas. The proposed activity would occur between July 1 and October 31, 2016. Noise generated from anchor handling activities and vessel's dynamic positioning thrusters could impact marine mammals in the vicinity of the activities. Take, by Level B harassments, of individuals of eight species of marine mammals may result from the specified activity.

Description of the Specified Activity

A detailed description of the Fairweather's anchor retrieval program is provided in the **Federal Register** notice for the proposed IHA (81 FR 31594; May 19, 2016). Since that time, no changes have been made to the proposed construction activities. Therefore, a detailed description is not provided here. Please refer to that **Federal Register** notice for the description of the specific activity.

Comments and Responses

A notice of NMFS' proposal to issue an IHA to Fairweather was published in the **Federal Register** on May 19, 2016 (81 FR 31594). That notice described, in detail,

Fairweather's activity, the marine mammal species and subsistence activities that may be affected by the proposed anchor retrieval program, and the anticipated effects on marine mammals and subsistence activities. During the 30-day public comment period, NMFS received comments from the Marine Mammal Commission (Commission) and the Alaska Oil and Gas Association (AOGA). Specific comments and responses are provided below.

Comment 1: The Commission states that since anchor handling would take 7 days at each site, and there are 5 sites, thus marine mammal takes should be based on a total of 35 days, instead of an average of 3.5 days per site with a total of 17.5 days.

Response: NMFS disagrees with the Commission's assessment. As stated in Fairweather's IHA application and the **Federal Register** notice for the proposed IHA (81 FR 31594; May 19, 2016), anchor handling at each site takes 2 – 7 days, with machinery operating at full power capacity only part of these days. Therefore, our analysis used an average of 3.5 days per site for anchor handling at each site. We consider this to be a more realistic scenario. In addition, because some of these days the shipboard machinery (including dynamic positioning thruster) will not be operating at full power, the 120-dB ensonified area is expected to be much smaller than expected. Therefore, we believe using a total of 17.5 days based on averaged operation days of 3.5 days per site provides better take estimates of marine mammals.

Comment 2: The Commission states that the method used to estimate the numbers of takes, which sums fractions of takes for each species across days, does not account for NMFS's 24-hour reset policy. The Commission argues that although this approach is more accurate in a pure mathematical sense, it ultimately negates the intent of a 24-hour reset. The Commission states that instead of summing fractions of takes across days and then rounding to estimate total takes, NMFS should have calculated a daily take estimate (determined by multiplying the

estimated density of marine mammals in the area by the daily ensonified area) and then rounding that to a whole number before multiplying it by the number of days that activities would occur. Thus, the Commission recommends that NMFS (1) follow its policy of a 24-hour reset for enumerating the number of each species that could be taken, (2) apply standard rounding rules before summing the numbers of estimated takes across days, and (3) for species that have the potential to be taken but model-estimated or calculated takes round to zero, use group size to inform the take estimates—these methods should be used consistently for all future incidental take authorizations.

Response: NMFS disagrees with the Commission's assessment and recommendation. While for certain projects NMFS has rounded to the whole number for daily takes, the circumstance for projects like this one when the objective of take estimation is to provide more accurate assessments for potential impacts to marine mammals for the entire project, the rounding in the middle of calculation will introduce large errors into the process. In addition, while NMFS uses a 24-hour reset for its take calculation in impact assessments, there is no need for daily (24-hour) rounding in this case because there is no daily limit of takes, so long as total authorized takes of marine mammal are not exceeded.

Comment 3: The Commission recommends that NMFS incorporate the peer-review panel's recommendations into the authorization.

Response: NMFS convened a peer-review panel to review Fairweather's marine mammal monitoring and mitigation measure. The peer-review panel met in March and provided its report to NMFS in mid-April. The peer-review panel report contains recommendations applicable to Fairweather's monitoring plans. Specifically, the panel recommended that Fairweather employ passive acoustic monitoring (PAM) in the vicinity of the proposed anchor

handling activities to collect better data on the presence, calling behavior and possible impacts to marine mammals for all the locations where anchors are deployed. In addition, the peer-review panel recommends that Fairweather coordinate closely with the communities nearest to each of the locations where it plans to retrieve anchors to avoid the peak of marine mammals' presence and subsistence hunting.

NMFS discussed the recommendations with Fairweather and determined that the deployment of PAM devices in the vicinity of the anchor handling activities is not feasible because the anchor retrieval activity at each site would only take an average of 3.5 days, and none of the anchor retrieval vessels or the support vessel could be used to serve as a PAM platform during the operation. Deployment of bottom-mounted sensors for such a short duration would incur unreasonable expenses to such a small project. Nevertheless, Fairweather agreed and is required to coordinate closely with the subsistence communities nearest to each of the project site where it plans to retrieve anchors to ensure no unmitigable impact to subsistence use of marine mammals by these communities. A detailed description of the peer-review process and the panel's recommendation is presented in the *Monitoring Measure Peer Review* section below.

Comment 4: AOGA objects to the proposed vessel movement mitigation measures that will protect the North Pacific right whale and its critical habitat. These measures require Fairweather to (1) avoid transits within designated North Pacific right whale critical habitat; (2) if transit within North Pacific right whale critical habitat cannot be avoided, vessel operators are requested to observe the 10 kt (18.52 km/h) vessel speed restriction while with in North Pacific right whale habitat; and (3) within the North Pacific right whale critical habitat, all vessels keep a distance of 2,625 ft (800 m) away from any observed North Pacific right whales and avoid

approaching whales head-on. AOGA reasons that in order for NMFS to require this mitigation measure there must be a reasonable expectation of take, and that existing measures for vessels transits, plus decades of activity transits have not resulted in vessel strikes of North Pacific right whales (NPRW).

Response: Although the density of NPRW is very low, even in its critical habitat, the additional measures will ensure that a lethal take of this species can be completely avoided. Fairweather voluntarily included those mitigation measures in its proposed action as a precautionary move to minimize the risk of a vessel strike. Regardless of how small the risk of a strike may be, Fairweather's decision reflects the potentially severe consequences to an already very small population should a strike occur. NMFS discussed this measure with Fairweather, and the company is committed to the measures that afford additional protection to this critically endangered species. Therefore, these measures are reflected in the IHA issued to Fairweather.

Description of Marine Mammals in the Area of the Specified Activity

The Chukchi and Beaufort Seas support a diverse assemblage of marine mammals. Table 2 lists the 12 marine mammal species under NMFS jurisdiction with confirmed or possible occurrence in the proposed project area.

Table 2. Marine mammal species with confirmed or possible occurrence in the proposed action area.

Species/Stocks	Conservation Status	Habitat	Population Estimate
Beluga whale (<i>Delphinapterus leucas</i>) – Eastern Chukchi Stock	ESA – Not Listed	Offshore, coastal, ice edges	3,710
Beluga whale (<i>Delphinapterus leucas</i>) – Beaufort Stock	ESA – Not Listed	Offshore, coastal, ice edges	32,453
Killer whale (<i>Orcinus orca</i>)	ESA – Not Listed	Widely distributed	2,084
Harbor porpoise (<i>Phocoena phocoena</i>) – Bering Sea Stock	ESA – Not Listed	Coastal, inland waters, shallow offshore waters	48,215

Bowhead whale (<i>Balaena mysticetus</i>) – Western Arctic Stock	ESA – Endangered	Pack ice, coastal	13,796
Gray whale (<i>Eschrichtius robustus</i>) – Eastern Pacific Stock	ESA – Not Listed	Coastal, lagoons, shallow offshore waters	19,126
Minke whale (<i>Balaenoptera acutorostrata</i>)	ESA – Not Listed	Shelf, coastal	810
Humpback whale (<i>Megaptera novaeangliae</i>) – Western North Pacific Stock	ESA – Endangered	Shelf slope, mostly pelagic	6,000-14,000
Fin whale (<i>Balaenoptera physalus</i>) – Northeast Pacific Stock	ESA – Endangered	Shelf, coastal	1,368
Bearded seal (<i>Erignathus barbatus</i>)	ESA – Not listed	Pack ice, shallow offshore waters	155,000
Spotted seal (<i>Phoca largha</i>)	ESA – (Arctic DPS Not Listed)	Pack ice, coastal haul outs, offshore	391,000
Ringed seal (<i>Pusa hispida</i>)	ESA – Not listed	Land-fast & pack ice, offshore	300,000
Ribbon seal (<i>Histiophoca fasciata</i>)	ESA – Not Listed	Pack ice, offshore	90,000-100,000

Among these species, bowhead, humpback, and fin whales are listed as endangered or threatened species under the Endangered Species Act (ESA). In addition, walrus and the polar bear could also occur in the U.S. Chukchi and Beaufort seas; however, these species are managed by the U.S. Fish and Wildlife Service (USFWS) and are not considered in this Notice of IHA.

Of all these species, bowhead and beluga whales and ringed, bearded, and spotted seals are the species most frequently sighted in the proposed activity area. The proposed action area in Chukchi and Beaufort seas also include areas that have been identified as important for bowhead whale reproduction during summer and fall and for beluga whale feeding and reproduction in summer.

Most spring-migrating bowhead whales would likely pass through the Chukchi Sea prior to the start of the planned anchor handling activities. However, a few whales that may remain in

the Chukchi Sea during the summer could be encountered during the anchor handling activities or by transiting vessels. More encounters with bowhead whales would be likely to occur during the westward fall migration in late September through October. Most bowheads migrating in September and October appear to transit across the northern portion of the Chukchi Sea to the Chukotka coast before heading south toward the Bering Sea (Quakenbush *et al.*, 2009). Some of these whales have traveled well north of the planned operations, but others have passed near to, or through, the proposed project area.

Two stocks of beluga whales occur in the proposed anchor retrieving project areas: the Eastern Chukchi stock and the Beaufort Sea stock. The Eastern Chukchi Sea belugas move into coastal areas, including Kasegaluk Lagoon, in late June and animals are sighted in the area until about mid-July (Frost *et al.*, 1993). This movement indicated some overlap in distribution with the Beaufort Sea beluga whale stock during late summer. Summer densities of beluga whales in offshore waters are expected to be low, with somewhat higher densities in ice-margin and nearshore areas. If belugas are present during the summer, they are more likely to occur in or near the ice edge or close to shore during their northward migration. In the fall, beluga whale densities offshore in the Chukchi Sea are expected to be somewhat higher than in the summer because individuals of the eastern Chukchi Sea stock and the Beaufort Sea stock will be migrating south to their wintering grounds in the Bering Sea (Allen and Angliss 2014).

Ringed seals are year-round residents in the Bering Sea, Norton and Kotzebue Sounds, and throughout the Chukchi and Beaufort Seas and are the most frequently encountered seal in the area (Allen and Angliss 2015). They occur as far south as Bristol Bay in years of extensive ice coverage but are generally not abundant south of Norton Sound except in nearshore areas (Frost 1985). Ringed seals will likely be the most abundant marine mammal species encountered

in the Chukchi Sea during anchor retrieval operations.

During spring when pupping, breeding, and molting occur, spotted seals are found along the southern edge of the sea ice in the Okhotsk and Bering seas (Quakenbush 1988; Rugh *et al.*, 1997). In late April and early May, adult spotted seals are often seen on the ice in female-pup or male-female pairs, or in male-female-pup triads. Sub-adults may be seen in larger groups of up to 200 animals. During the summer, spotted seals are found primarily in the Bering and Chukchi seas, but some range into the Beaufort Sea (Rugh *et al.*, 1997; Lowry *et al.*, 1998) from July until September. Spotted seals are expected to occur near the planned anchor handling activities in the Chukchi Sea, but they will likely be fewer in number than ringed seals.

Bearded seals occur over the continental shelves of the Bering, Chukchi, and Beaufort seas (Burns 1981b). During the summer period, bearded seals occur mainly in relatively shallow areas because they are predominantly benthic feeders (Burns 1981b). During winter, most bearded seals in Alaskan waters are found in the Bering Sea. From mid-April to June as the ice recedes, some of the bearded seals that overwinter in the Bering Sea migrate northward through the Bering Strait. During the summer they are found near the widely fragmented margin of sea ice covering the continental shelf of the Chukchi Sea and in nearshore areas of the central and western Beaufort Sea (Allen and Angliss 2015). Bearded seals are likely to be encountered during anchor handling activities, and greater numbers of bearded seals are likely to be encountered if the ice edge occurs nearby.

Further information on the biology and local distribution of these species can be found in Fairweather's application (see **ADDRESSES**) and the NMFS Marine Mammal Stock Assessment Reports, which are available online at:

http://www.nmfs.noaa.gov/pr/sars/pdf/alaska2015_final.pdf.

Potential Effects of the Specified Activity on Marine Mammals

The effects of the stressors associated with the specified activity (*e.g.*, acoustic effects of anchor retrieval, which include noises from dynamic positioning, winch operations, and other machinery operations) have the potential to result in harassment of marine mammals. The **Federal Register** notice for the proposed IHA (81 FR 31594, May 19, 2016) included a discussion of the effects of acoustic stimuli on marine mammals. That information is not repeated here. No instances of injury, serious injury, or mortality (Level A take) are expected as a result of the anchor retrieval activities, nor are any Level A take authorized by this IHA.

Anticipated Effects on Marine Mammal Habitat

The environmental effects of Fairweather's proposed anchor retrieval activity, which includes noise exposure to marine mammal prey species and physical disturbances of project locations, are discussed in the **Federal Register** notice for the proposed IHA (81 FR 31594, May 19, 2016). Therefore, that information is not repeated here.

Mitigation Measures

In order to issue an incidental take authorization under section 101(a)(5)(D) of the MMPA, NMFS must set forth the permissible methods of taking pursuant to such activity, and other means of effecting the least practicable adverse impact on such species or stock and its habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance, and on the availability of such species or stock for taking for certain subsistence uses.

For the planned Fairweather open-water anchor retrieval operations in the Chukchi and Beaufort seas, Fairweather is required to implement the following mitigation measures to minimize the potential impacts to marine mammals in the project vicinity as a result of the

activities. The primary purpose of these mitigation measures is to detect marine mammals and avoid vessel interactions during the anchor retrieval operation.

(a) Establishing and Monitoring Exclusion Zone for Anchor Retrieval and Ice Management.

(1) Protected species observers (PSO) would establish and monitor a safety zone of 500 m for anchor retrieval activity and ice management. The modeled safety zone for anchor retrieval is 100 m from the source.

(2) When the vessel is positioned on-site, the PSOs will ‘clear’ the area by observing the 500m safety zone for 30 minutes; if no marine mammals are observed within those 30 minutes, anchor retrieval or ice management will commence.

(3) If a marine mammal(s) is observed within the 500 m of the anchor retrieval and/or ice management safety zone during the clearing, the PSOs will continue to watch until the animal(s) is gone and has not returned for 15 minutes if the sighting was a pinniped, or 30 minutes if it was a cetacean.

(4) Once the PSOs have cleared the area, anchor retrieval or ice management operations may commence.

(5) Should a marine mammal(s) be observed within or approaching the 500 m safety zone during the retrieval or ice management operations, the PSOs will monitor and carefully record any reactions observed.

(b) Establishing and Monitoring Exclusion Zone for Sonar Activity.

Although NMFS does not expect marine mammals would be taken by high-frequency sonar used for locating anchors, at Fairweather’s suggestion the following mitigation and monitoring measures related to sonar operations will be implemented.

(1) PSOs would establish and monitor an exclusion zone of 500 m for sonar activity.

The modeled exclusion zone for sonar activity is 100 m from the source.

(2) Prior to starting the sonar activity, the PSOs will ‘clear’ the area by observing the 500 m exclusion zone for 30 minutes; if no marine mammals are observed within those 30 minutes, sonar activity will commence.

(3) If a marine mammal(s) is observed within the 500 m exclusion zone during the clearing, the PSOs will continue to watch until the animal(s) is gone and has not returned for 15 minutes if the sighting was a pinniped, or 30 minutes if it was a cetacean.

(4) Once the PSOs have cleared the area, sonar activity may commence.

(c) Establishing Zones of Influence (ZOIs)

PSOs would establish and monitor ZOIs where the received level is 120 dB during Fairweather’s anchor retrieval operation and where the received level is 160 dB during sonar activity.

(d) Vessel Speed or Course Measures

If a marine mammal is detected outside the 500 m sonar exclusion zone for sonar activities or during transit between sites, based on its position and the relative motion, is likely to enter those zones, the vessel’s speed and/or direct course may, when practical and safe, be changed. The marine mammal activities and movements relative to the vessels shall be closely monitored to ensure that the marine mammal does not approach within either zone. If the mammal appears likely to enter the respective zone, further mitigation actions will be taken, *i.e.*, either further course alterations or shut down in the case of the sonar. During actual anchor handling, the vessel is stationary on site.

In addition, the vessel shall reduce its speed to 5 kt (9.26 km/h) or lower when within 900 ft (274 m) of cetaceans or pinnipeds. Further, Fairweather shall avoid transits within designated NPRW critical habitat. If transit within NPRW critical habitat cannot be avoided, vessel operators are requested to exercise extreme caution and observe the of 10 kt (18.52 km/h) vessel speed restriction while within North Pacific right whale critical habitat. Within the NPRW critical habitat, all vessels shall keep 2,625 ft (800 m) away from any observed NPRW and avoid approaching whales head-on, consistent with vessel safety.

(e) Shutdown Measures

If an animal enters or is approaching the 500 m exclusion zone, sonar will be shut down immediately. Sonar activity will not resume until the marine mammal has cleared the exclusion zone. PSOs will also collect behavioral information on marine mammals beyond the exclusion zone.

Mitigation Conclusions

NMFS has carefully evaluated Fairweather's mitigation measures and considered a range of other measures in the context of ensuring that NMFS prescribes the means of effecting the least practicable impact on the affected marine mammal species and stocks and their habitat. Our evaluation of potential measures included consideration of the following factors in relation to one another:

- The manner in which, and the degree to which, the successful implementation of the measures are expected to minimize adverse impacts to marine mammals;
- The proven or likely efficacy of the specific measure to minimize adverse impacts as planned; and

- The practicability of the measure for applicant implementation.

Any mitigation measure(s) prescribed by NMFS should be able to accomplish, have a reasonable likelihood of accomplishing (based on current science), or contribute to the accomplishment of one or more of the general goals listed below:

1. Avoidance or minimization of injury or death of marine mammals wherever possible (goals 2, 3, and 4 may contribute to this goal).

2. A reduction in the numbers of marine mammals (total number or number at biologically important time or location) exposed to received levels of activities expected to result in the take of marine mammals (this goal may contribute to 1, above, or to reducing harassment takes only).

3. A reduction in the number of times (total number or number at biologically important time or location) individuals would be exposed to received levels of activities expected to result in the take of marine mammals (this goal may contribute to 1, above, or to reducing harassment takes only).

4. A reduction in the intensity of exposures (either total number or number at biologically important time or location) to received levels of activities expected to result in the take of marine mammals (this goal may contribute to 1, above, or to reducing the severity of harassment takes only).

5. Avoidance or minimization of adverse effects to marine mammal habitat, paying special attention to the food base, activities that block or limit passage to or from biologically important areas, permanent destruction of habitat, or temporary destruction/disturbance of habitat during a biologically important time.

6. For monitoring directly related to mitigation – an increase in the probability of

detecting marine mammals, thus allowing for more effective implementation of the mitigation.

Based on our evaluation of the applicant's proposed measures, NMFS has determined that the proposed mitigation measures provide the means of effecting the least practicable impact on marine mammals species or stocks and their habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance. Measures to ensure availability of such species or stock for taking for certain subsistence uses are discussed later in this document (see "Impact on Availability of Affected Species or Stock for Taking for Subsistence Uses" section).

Monitoring and Reporting Measures

In order to issue an ITA for an activity, section 101(a)(5)(D) of the MMPA states that NMFS must set forth "requirements pertaining to the monitoring and reporting of such taking." The MMPA implementing regulations at 50 CFR 216.104 (a)(13) indicate that requests for ITAs must include the suggested means of accomplishing the necessary monitoring and reporting that will result in increased knowledge of the species and of the level of taking or impacts on populations of marine mammals that are expected to be present in the proposed action area. Fairweather submitted a marine mammal monitoring plan as part of the IHA application.

Monitoring measures prescribed by NMFS should accomplish one or more of the following general goals:

1. An increase in our understanding of the likely occurrence of marine mammal species in the vicinity of the action, *i.e.*, presence, abundance, distribution, and/or density of species.
2. An increase in our understanding of the nature, scope, or context of the likely exposure of marine mammal species to any of the potential stressor(s) associated with the action (*e.g.* sound or visual stimuli), through better understanding of one or more of the following: the action itself and its environment (*e.g.* sound source characterization, propagation, and ambient noise

levels); the affected species (*e.g.* life history or dive pattern); the likely co-occurrence of marine mammal species with the action (in whole or part) associated with specific adverse effects; and/or the likely biological or behavioral context of exposure to the stressor for the marine mammal (*e.g.*, age class of exposed animals or known pupping, calving or feeding areas).

3. An increase in our understanding of how individual marine mammals respond (behaviorally or physiologically) to the specific stressors associated with the action (in specific contexts, where possible, *e.g.*, at what distance or received level).

4. An increase in our understanding of how anticipated individual responses, to individual stressors or anticipated combinations of stressors, may impact either: the long-term fitness and survival of an individual; or the population, species, or stock (*e.g.* through effects on annual rates of recruitment or survival).

5. An increase in our understanding of how the activity affects marine mammal habitat, such as through effects on prey sources or acoustic habitat (*e.g.*, through characterization of longer-term contributions of multiple sound sources to rising ambient noise levels and assessment of the potential chronic effects on marine mammals).

6. An increase in understanding of the impacts of the activity on marine mammals in combination with the impacts of other anthropogenic activities or natural factors occurring in the region.

7. An increase in our understanding of the effectiveness of mitigation and monitoring measures.

8. An increase in the probability of detecting marine mammals (through improved technology or methodology), both specifically within the safety zone (thus allowing for more effective implementation of the mitigation) and in general, to better achieve the above goals.

Monitoring Measures

Monitoring will provide information on the numbers of marine mammals potentially affected by the anchor retrieval operation and facilitate real-time mitigation to prevent injury of marine mammals by vessel traffic. These goals will be accomplished in the Chukchi and Beaufort seas during 2016 by conducting vessel-based monitoring to document marine mammal presence and distribution in the vicinity of the operation area.

Visual monitoring by PSOs during anchor retrieval operation, and periods when the operation is not occurring, will provide information on the numbers of marine mammals potentially affected by the activity. Vessel-based PSOs onboard the vessels will record the numbers and species of marine mammals observed in the area and any observable reaction of marine mammals to the anchor retrieval operation in the Chukchi and Beaufort seas.

Visual-based PSOs

Vessel-based monitoring for marine mammals would be done by trained PSOs throughout the period of anchor retrieval operation. The observers would monitor the occurrence of marine mammals onboard vessels during all daylight periods during operation. PSO duties would include watching for and identifying marine mammals; recording their numbers, distances, and reactions to the survey operations; and documenting “take by harassment.”

A sufficient number of PSOs would be required onboard each survey vessel to meet the following criteria:

- 100 percent monitoring coverage during all periods of anchor retrieval operations in daylight;
- Maximum of 4 consecutive hours on watch per PSO; and

- Maximum of 12 hours of watch time per day per PSO.

PSO teams will consist of Inupiat observers and experienced field biologists. Each vessel will have an experienced field crew leader to supervise the PSO team. The total number of PSOs may decrease later in the season as the duration of daylight decreases.

(1) PSOs Qualification and Training

Lead PSOs and most PSOs would be individuals with experience as observers during marine mammal monitoring projects in Alaska or other offshore areas in recent years. New or inexperienced PSOs would be paired with an experienced PSO or experienced field biologist so that the quality of marine mammal observations and data recording is kept consistent.

Resumes for candidate PSOs would be provided to NMFS for review and acceptance of their qualifications. Inupiat observers would be experienced in the region and familiar with the marine mammals of the area. All observers would complete an observer training course designed to familiarize individuals with monitoring and data collection procedures.

(2) Specialized Field Equipment

The PSOs shall be provided with Fujinon 7 X 50 or equivalent binoculars for visual based monitoring onboard all vessels.

Laser range finders (Leica LRF 1200 laser rangefinder or equivalent) would be available to assist with distance estimation.

Marine Mammal Behavioral Response to Vessel Disturbance Study

As part of the Chukchi Sea Environmental Studies Program (CSESP), marine mammal biologists collected behavioral response data on walruses and seals to the vessel. The objectives of the observer on the CSESP program were to collect information on marine mammal distribution and density estimates using standard line-transect theory. In other words, the

program was not a mitigation program for any particular seismic activity. Because the vessels in this program will be transiting a large portion of the time, Fairweather proposes to utilize this opportunity to collect information on responses of marine mammals, particularly walruses and seals, to vessel disturbance.

As part of the standard Fairweather's observation protocol, observers will record the initial and subsequent behaviors of marine mammals, a methodology they refer to as 'focal following.' Marine mammals will be monitored and observed until they disappear from the PSO's view (PSOs may have to follow the marine mammals by moving to new locations in order to keep the marine mammals in constant view). Observers will also record any perceived reactions that marine mammals may have in response to the vessel. When following the animal observers will use either a notebook or voice recorder to note any changes in behavior and the time when these changes occur. Time of first observation, time of changes in behavior, and time last seen will be recorded. Behaviors and changes in behaviors of marine mammals will be recorded as long as they are in view of the boat. After the animal is out of sight, PSOs will summarize the observation in the notes field of the electronic data collection platform. It may be difficult to find the animal being followed after it dives and if this happens, PSO will stop focal follow observation.

For large groups of marine mammals where it is difficult to monitor each animal, one or more focal animals, (*e.g.*, cow/calf pair, sub-adult female, adult male, etc.) will be chosen to monitor until it is no longer observable. For a sighting with more than one animal, the most common behavior of the group will be recorded. Focal animals will be chosen without bias in relation to age and sex, but as observations accumulate and specific age/sex categories are

underrepresented, focal animals may be chosen from those underrepresented categories, if possible.

A separate section in the 90-day report (see below) will be provided with a summary of results of vessel disturbance, with the ultimate goal of a peer-reviewed publication.

Reporting Measures

(1) Monitoring Reports

The results of Fairweather's anchor retrieval program monitoring reports would be presented in weekly, monthly, and 90-day reports, as required by NMFS under the proposed IHA. The initial final reports are due to NMFS within 90 days after the expiration of the IHA (if issued). The reports will include:

- Summaries of monitoring effort (*e.g.*, total hours, total distances, and marine mammal distribution through the study period, accounting for sea state and other factors affecting visibility and detectability of marine mammals);
- Summaries that represent an initial level of interpretation of the efficacy, measurements, and observations, rather than raw data, fully processed analyses, or a summary of operations and important observations;
- Information on distances marine mammals are sighted from operations and the associated noise isopleth for active sound sources (*i.e.*, anchor retrieval, ice management, side scan sonar);
- Analyses of the effects of various factors influencing detectability of marine mammals (*e.g.*, sea state, number of observers, and fog/glare);

- Species composition, occurrence, and distribution of marine mammal sightings, including date, water depth, numbers, age/size/gender categories (if determinable), group sizes, and ice cover;
- Estimates of uncertainty in all take estimates, with uncertainty expressed by the presentation of confidence limits, a minimum-maximum, posterior probability distribution, or another applicable method, with the exact approach to be selected based on the sampling method and data available; and
- A clear comparison of authorized takes and the level of actual estimated takes.

The 90-day reports will be subject to review and comment by NMFS. Any recommendations made by NMFS must be addressed in the final report prior to acceptance by NMFS.

(2) Notification of Injured or Dead Marine Mammals

In the unanticipated event that the specified activity clearly causes the take of a marine mammal in a manner prohibited by the IHA, such as a serious injury, or mortality (*e.g.*, ship-strike, gear interaction, and/or entanglement), Fairweather would immediately cease the specified activities and immediately report the incident to the Chief of the Permits and Conservation Division, Office of Protected Resources, NMFS, and the Alaska Regional Stranding Coordinators. The report would include the following information:

- Time, date, and location (latitude/longitude) of the incident;
- Name and type of vessel involved;
- Vessel's speed during and leading up to the incident;
- Description of the incident;

- Status of all sound source use in the 24 hours preceding the incident;
- Water depth;
- Environmental conditions (*e.g.*, wind speed and direction, Beaufort sea state, cloud cover, and visibility);
- Description of all marine mammal observations in the 24 hours preceding the incident;
- Species identification or description of the animal(s) involved;
- Fate of the animal(s); and
- Photographs or video footage of the animal(s) (if equipment is available).

Activities would not resume until NMFS is able to review the circumstances of the prohibited take. NMFS would work with Fairweather to determine necessary actions to minimize the likelihood of further prohibited take and ensure MMPA compliance. Fairweather would not be able to resume its activities until notified by NMFS via letter, email, or telephone.

In the event that Fairweather discovers a dead marine mammal and the lead PSO determines that the cause of the death is unknown and the death is relatively recent (*i.e.*, in less than a moderate state of decomposition as described in the next paragraph), Fairweather would immediately report the incident to the Chief of the Permits and Conservation Division, Office of Protected Resources, NMFS, and the NMFS Alaska Stranding Hotline and/or by email to the Alaska Regional Stranding Coordinators. The report would include the same information identified in the paragraph above. Activities would be able to continue while NMFS reviews the circumstances of the incident. NMFS would work with Fairweather to determine whether modifications in the activities are appropriate.

In the event that Fairweather discovers a dead marine mammal, and the lead PSO determines that the death is not associated with or related to the activities authorized in the IHA (e.g., previously wounded animal, carcass with moderate to advanced decomposition, or scavenger damage), Fairweather would report the incident to the Chief of the Permits and Conservation Division, Office of Protected Resources, NMFS, and the NMFS Alaska Stranding Hotline and/or by email to the Alaska Regional Stranding Coordinators, within 24 hours of the discovery. Fairweather would provide photographs or video footage (if available) or other documentation of the stranded animal sighting to NMFS and the Marine Mammal Stranding Network. Fairweather can continue its operations under such a case.

Monitoring Plan Peer Review

The MMPA requires that monitoring plans be independently peer reviewed “where the proposed activity may affect the availability of a species or stock for taking for subsistence uses” (16 U.S.C. 1371(a)(5)(D)(ii)(III)). Regarding this requirement, NMFS’ implementing regulations state, “Upon receipt of a complete monitoring plan, and at its discretion, [NMFS] will either submit the plan to members of a peer review panel for review or within 60 days of receipt of the proposed monitoring plan, schedule a workshop to review the plan” (50 CFR 216.108(d)).

NMFS convened an independent peer review panel to review Fairweather’s Marine Mammal Monitoring and Mitigation Plan (4MP) for the planned anchor retrieval operation in the Chukchi and Beaufort seas. The panel met via web conference in early March 2016, and provided comments to NMFS in April 2016. The full panel report can be viewed online at: <http://www.nmfs.noaa.gov/pr/permits/incidental/research.htm>.

NMFS provided the panel with Fairweather's IHA application and monitoring plan and asked the panel to answer the following questions:

1. Will the applicant's stated objectives effectively further the understanding of the impacts of their activities on marine mammals and otherwise accomplish the goals stated above? If not, how should the objectives be modified to better accomplish the goals above?

2. Can the applicant achieve the stated objectives based on the methods described in the plan?

3. Are there technical modifications to the proposed monitoring techniques and methodologies proposed by the applicant that should be considered to better accomplish their stated objectives?

4. Are there techniques not proposed by the applicant (i.e., additional monitoring techniques or methodologies) that should be considered for inclusion in the applicant's monitoring program to better accomplish their stated objectives?

5. What is the best way for an applicant to present their data and results (formatting, metrics, graphics, etc.) in the required reports that are to be submitted to NMFS (i.e., 90-day report and comprehensive report)?

The peer-review panel report contains recommendations applicable to Fairweather's monitoring plans. Specifically, the panel recommended that Fairweather employ PAM in the vicinity of the proposed anchor handling activities to collect better data on the presence, calling behavior and possible impacts to marine mammals for all the locations where anchors are deployed. In addition, although not requested, the peer-review panel recommends that Fairweather coordinate closely with the communities nearest to each of the locations where it

plans to retrieve anchors to avoid the peak of marine mammals' presence and subsistence hunting.

NMFS discussed the peer review panel report and its recommendation of conducting PAM in the vicinity of anchor retrieving sites with Fairweather and considers this recommendation is not practicable for Fairweather's anchor retrieving operations. As discussed in the **Federal Register** for the proposed IHA (81 FR 31594, May 19, 2016), the duration of activities in each area is projected to be only 1-3 days for complete anchor recovery (up to 7 as a very conservative estimate), with only ~20 minutes per system being the loud "unseating" portion. At the Sivulli site, which has the highest number of anchor systems (12), the total "unseating" time would be 4 hours, occurring in 12 x 20-minute bursts. Because of this short duration, particularly of the sound with the largest potential for impacts to marine mammals, NMFS does not think that PAM is warranted. Moreover, deploying and recovering PAM equipment for such short durations only prolongs the amount of time the vessels are in each project area, thus increasing the impacts on the animals. Additionally, deploying PAM equipment for only 2 days will not greatly expand the body of knowledge about marine mammal acoustics in the Chukchi and Beaufort Seas, nor will it be comparable to previous studies in the area. Lastly, unless PAM monitoring is real-time, it is not a useful tool for mitigation. The only way for it to be real-time would be to have several smaller vessels on the project with the PAM equipment (at which point we would employ visual PSOs), but this option is not practical or reasonable for the small scale of this project.

For close coordination with subsistence communities near the anchor retrieval locations, Fairweather states that it is committed to working very closely with the communities surrounding its activities. Fairweather has conducted meetings (either via teleconference in-person) with

representatives from Kotzebue, Pt. Hope, Pt. Lay, Wainwright, Barrow, Nuiqsut, and Kaktovik. Fairweather will have experienced Inupiat Communicators/Observers (ICOs) onboard each of the vessels as liaisons to the communities from all communities. As part of the pre-season planning and safety seminar, whaling captains and members of Alaska Eskimo Whaling Commission will be presenting on their culture and traditional knowledge to Fairweather.

Estimated Take by Incidental Harassment

Except with respect to certain activities not pertinent here, the MMPA defines “harassment” as: any act of pursuit, torment, or annoyance which (i) has the potential to injure a marine mammal or marine mammal stock in the wild (Level A harassment); or (ii) has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering (Level B harassment).

Takes by Level B harassments of some species are anticipated as a result of Fairweather’s proposed anchor retrieval operation. NMFS expects marine mammal takes could result from noise propagation from anchor retrieving activities, which includes the operation of dynamic thrusters and other machinery noises generated from anchor retrieving using winch and steel cables. NMFS does not expect marine mammals would be taken by collision with vessels, because the vessels will be moving at low speeds, and PSOs on the vessels will be monitoring for marine mammals and will be able to alert the vessels to avoid any marine mammals in the area.

For non-impulse sounds, such as those produced by the dynamic positioning thrusters and anchor handling during Fairweather’s anchor retrieval operation, NMFS uses the 180 and 190 dB (rms) re 1 μ Pa isopleth to indicate the onset of Level A harassment for cetaceans and pinnipeds,

respectively; and the 120 dB (rms) re 1 μ Pa isopleth for Level B harassment of all marine mammals.

The estimates of the numbers of each species of marine mammal that could potentially be exposed to sound associated with the anchor retrieval activity are calculated by multiplying the area of ensonified areas by animal densities. Specifically, the ensonified area for anchor retrieving activities is the area where received noise levels are above 120 dB, during the periods when these activities would be occurring. For the 2015 IHA application for Shell's exploration drilling in the Chukchi Sea (Shell 2015), JASCO modeled the anchor handling activity using their estimated distance to 120 dB isopleths at 14,000 m (JASCO 2013). This yields an estimated 120 dB ensonified area of 615 km².

The duration of sound-producing activity was calculated for each site. Although each anchor site has different configurations and numbers of anchors, Fairweather assumes it would take up to seven days per site to remove all anchors. Because the vessels will not be operating at full power during the entire time, Fairweather assumes half of the time (3.5 days) will be exceeding 120 dB. With five (5) anchor sites, this results in 17.5 days of anchor handling activity that may result in disturbance.

Description of the Sound Sources

Anchor Retrieving: During Shell's 2012 exploratory program in the Beaufort and Chukchi seas, sound source verifications (SSVs) were conducted of all activities conducted near both Burger and Sivulliq during the open-water season (LGL *et al.*, 2014). Detailed descriptions of the sound measurements and analysis methods can be found in Chapter 3 of the Shell 2012 90-day report to NMFS (Austin *et al.*, 2013). Anchor handling activities were measured at 143 dB at 860 m, the loudest activity was when "seating" the anchors (LGL *et al.*, 2014). It is

assumed that the unseating of anchors will be similar in power needed from the vessel, so this source is suitable to estimate area ensonified. In the report, JASCO extrapolated the distance to the 120 dB threshold using a simple spreading loss of $19 \log R$, resulting in a radius of 14,000 m. This radius was used to estimate the area ensonified for this application.

Each anchor site has different configurations and numbers of anchors, but Fairweather assumes it will take up to seven (7) days per site to remove all anchors. Because the vessels will not be operating at full power during the entire time, Fairweather assumed half of the time (3.5 days) will be utilizing the high power to unseat anchors. With five (5) anchor sites, this results in 17.5 days of anchor handling activity that may result in disturbance.

Ice Management: Although highly unlikely, it may be necessary for ice management near Point Barrow while transiting to the Sivulliqliq site. During exploration drilling operations on the Burger Prospect in 2012, encroachment of sea ice required the Discoverer to temporarily depart the drill site. While it was standing by to the south, ice management vessels remained at the drill site to protect buoys that were attached to the anchors. Sounds produced by vessels managing the ice were recorded and the distance to the 120 dB re 1 μ Pa rms threshold was calculated to occur at 9.6 km (JASCO *et al.*, 2014). The total calculated ensonified area would be 290 km². Fairweather assumes that it could take place over a two (2) day period near Point Barrow.

Estimates of Marine Mammal Densities

The densities of marine mammals per species were calculated using 2009-2014 Aerial Surveys of Arctic Marine Mammals (ASAMM) data (<http://www.afsc.noaa.gov/nmml/cetacean/bwasp/index.php>) for bowhead, beluga, and gray whales in the Beaufort and Chukchi Seas and the Shell 2015 IHA application (Shell 2015) for all

other species. The ASAMM density data are separated by depth, month, year, and location. The maximum calculated density with the depth strata in which the anchor system is located, the month (based on project activity timing), year (maximum of 2009-2014), and location (Chukchi vs. Beaufort) was used. For example, anchor handling only occurs in the summer, so density data from July and August were used. Side scan sonar may occur at the beginning and end of the project, so density data were separated into summer and fall. The Shell 2015 IHA included average and maximum density estimates for area, month, and location. The maximum calculated density was used in take estimates for these other species, regardless of area, month, or location.

Bowhead Whale

The bowhead whale density estimate is separated into the Chukchi and Beaufort seas based on the ASAMM study areas for aerial data collected 2008-2014. For each depth stratum, the maximum density estimate was used for summer and fall (Table 3). The bowhead whale densities in the Chukchi Sea range up to 0.0145 whales/km² in the summer and up to 0.1813 whales/km² in the fall, with the highest density for both seasons in the 50-200 m north region. The bowhead whale densities in the Beaufort Sea range up to 0.2883 whales/km² in the summer and up to 0.1310 whales/km² in the fall, both in the east 21-50 m region.

Beluga Whale

The beluga whale density estimate is separated into the Chukchi Sea and Beaufort Seas based on the ASAMM study areas for aerial data collected 2008-2014. For each depth stratum, the maximum density estimate was used for summer and fall (Table 3). The beluga whale densities in the Chukchi Sea range up to 0.1633 whales/km² in the summer in the 0-35 m north region and up to 0.0495 whales/km² in the fall in the 50-200 m north region. The beluga whale

densities in the Beaufort Sea range up to 0.7924 whales/km² in the summer and up to 0.1425 whales/km² in the fall, both in the east 51-200 m east region.

Gray Whale

The gray whale density estimate is only in the Chukchi Sea based on the ASAMM study areas for aerial data collected 2008-2014. For each depth stratum, the maximum density estimate was used for summer and fall (Table 3). The gray whale densities in the Chukchi Sea range up to 0.2594 whales/km² in the summer and up to 0.1732 whales/km² in the fall, with the highest density for both seasons in the 50-200 m south region.

Other Cetaceans

Shell (2015) derived average and maximum density estimates for summer and fall from all available open-water research and monitoring data. For the purposes of this project, the maximum of the density estimates were used, regardless of whether the density was for summer or fall (Table 3). The maximum density is 0.0044 whales/km² for the harbor porpoise; 0.0004 whales/km² for the fin, humpback, and killer whale; and 0.0006 whales/km² for the minke whale.

Seals

Shell (2015) derived average and maximum density estimates for summer and fall from all available open-water research and monitoring data. For the purposes of this project, the maximum of the density estimates were used, regardless of whether the density was for summer or fall (Table 3). The maximum density is 0.6075 seals/km² for the ringed seal; 0.0203 seals/km² for the bearded seal; and 0.0122 seals/km² for the spotted seal.

Table 3. Expected Densities of Whales and Seals in Area of the Chukchi and Beaufort Seas.

Species	Density (#/km ²)			
	Chukchi Sea		Beaufort Sea	
	Summer	Fall	Summer	Fall
Bowhead whale	0.0145	0.1813	0.2883	0.1310
Beluga whale	0.1633	0.0495	0.7924	0.1425
Gray whale	0.2594	0.1732	NA	NA
Fin whale	0.0004		0	
Humpback whale	0.0004			
Minke whale	0.0006			
Harbor porpoise	0.0044			
Killer whale	0.0004			
Ringed seal	0.6075			
Bearded seal	0.0203			
Spotted seal	0.0122			

Calculation of Exposures

The estimates of the numbers of each marine mammal species that could potentially be exposed to sound associated with the anchor retrieval program, specifically the unseating of anchors, potential side scan sonar survey, and potential ice management, were estimated by multiplying the following three variables: 1) the area (in km²) of ensonification for disturbance for each activity, 2) the duration (in days) of the sound activity, and 3) the density (# of marine mammals/km²) as summarized in Table 3. It is important to note that these estimates are based on worst-case (and unlikely) sound levels and duration, and the maximum reported density estimates that do not account for the movement of animals near the anchor site during retrieval activities.

Since the two stocks occur in the Beaufort and Chukchi seas and one cannot distinguish them visually, the pooled densities in different seasons represent the presence of both stocks. The current abundance estimate for the Eastern Chukchi Sea Stock is 3,710 individuals and the abundance estimate for the Beaufort Sea Stock is 39,258 individuals (Allen and Angliss 2014),

resulting in a combined total estimate of 42,968 individuals. The Eastern Chukchi Sea Stock is, therefore, considered to represent 8.6 percent of the combined population and the Beaufort Sea Stock is considered to represent 91.4 percent of the same. Therefore, the estimated takes of each beluga stock were based on the proportion of these stocks, with 8.6 percent account for the Eastern Chukchi Sea Stock, and 91.4 percent account for the Beaufort Sea Stock for both summer and fall.

A summary of the total number of estimated exposures per species, per sea, and per season is provided in Table 4.

Table 4. Summary of Number of Marine Mammals Potentially Exposed to Level B Harassment.

Species	Chukchi Sea	Beaufort Sea	Abundance	Total	% of stock or population
Bowhead whale	37.41	620.51	19,534	658	3.37%
Gray whale	197.41	0	20,990	197	0.94%
Beluga whale (E. Chukchi stock)	33.55	19.98	3,710	54	1.47%
Beluga whale (Beaufort stock)	356.56	212.38	39,258	569	1.45%
Fin whale	3.68	0	10,103	4	0.04%
Humpback whale	3.68	0.86	1,652	5	0.27%
Minke whale	5.52	1.29	1,233	7	0.55%
Harbor porpoise	40.46	9.48	48,215	50	0.10%
Killer whale	3.68	0.86	2,347	4	0.19%
Ringed seal	5,586.67	1,308.58	249,000	6,895	2.77%
Bearded seal	186.68	43.73	155,000	231	0.15%
Spotted seal	112.19	26.28	460,268	138	0.03%

The estimated Level B harassment takes as a percentage of the marine mammal stock are less than 3.37 percent in all cases (Table 4). The highest percent of population estimated to be taken is 3.37 percent by Level B harassment of the bowhead whale.

Analysis and Determinations

Negligible Impact

Negligible impact is “an impact resulting from the specified activity that cannot be reasonably expected to, and is not reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival” (50 CFR 216.103). A negligible impact finding is based on the lack of likely adverse effects on annual rates of recruitment or survival (*i.e.*, population-level effects). An estimate of the number of Level B harassment takes, alone, is not enough information on which to base an impact determination. In addition to considering estimates of the number of marine mammals that might be “taken” through behavioral harassment, NMFS must consider other factors, such as the likely nature of any responses (their intensity, duration, etc.), the context of any responses (critical reproductive time or location, migration, etc.), as well as the number and nature of estimated Level A harassment takes, the number of estimated mortalities, effects on habitat, and the status of the species.

To avoid repetition, this discussion of our analyses generally applies to all the species listed in Table 4, given that the anticipated effects of Fairweather’s anchor retrieving operation on marine mammals (taking into account the proposed mitigation) are expected to be relatively similar in nature. Where there are meaningful differences between species or stocks, or groups of species, in anticipated individual responses to activities, impact of expected take on the population due to differences in population status, or impacts on habitat, they are pointed out below.

No injuries or mortalities are anticipated to occur as a result of Fairweather’s anchor retrieving operation, and none are proposed to be authorized. Additionally, animals in the area are not expected to incur hearing impairment (*i.e.*, TTS or PTS) or non-auditory physiological effects. The takes that are anticipated and authorized are expected to be limited to short-term

Level B behavioral harassment in the form of brief startling reaction and/or temporarily vacating the area.

Mitigation measures, such as controlled vessel speed and dedicated marine mammal observers, will ensure that takes are within the level being analyzed. In all cases, the effects are expected to be short-term, with no lasting biological consequences.

Of the 12 marine mammal species likely to occur in the proposed anchor retrieving area, bowhead, humpback, and fin whales are listed as endangered or threatened under the ESA. These species are also designated as “depleted” under the MMPA. None of the other species that may occur in the project area are listed as threatened or endangered under the ESA or designated as depleted under the MMPA.

Fairweather’s proposed activities overlap areas that have been identified as biologically important areas (BIAs) for feeding for the gray and bowhead whales and for reproduction for gray whale during the summer and fall months (Clarke *et al.*, 2015). In addition, the coastal Beaufort Sea also serves as a migratory corridor during bowhead whale spring migration, as well as for their feeding and breeding activities. Additionally, the coastal area of Chukchi and Beaufort seas also serve as BIAs for beluga whales for their feeding and migration. However, Fairweather’s proposed anchor retrieving operation would only occur in 5 locations totaling a maximum of 10 days. As discussed earlier, the Level B behavioral harassment of marine mammals from the proposed activity is expected to be in the form of brief startling reactions and animals temporarily vacating the area. No long-term biologically significant impacts to marine mammals are expected from the proposed anchor retrieving activity.

Based on the analysis contained herein of the likely effects of the specified activity on marine mammals and their habitat, and taking into consideration the implementation of the

proposed monitoring and mitigation measures, NMFS finds that the total marine mammal take from Fairweather's proposed anchor retrieving operation in the Chukchi and Beaufort seas is not expected to adversely affect the affected species or stocks through impacts on annual rates of recruitment or survival, and therefore will have a negligible impact on the affected marine mammal species or stocks.

Small Numbers

The authorized takes represent less than 3.37 percent of all populations or stocks potentially impacted (see Table 4 in this document). The number of marine mammals authorized to be taken are small in proportion to the total populations of the affected species or stocks.

Impact on Availability of Affected Species for Taking for Subsistence Uses

Subsistence hunting is an essential aspect of Iñupiat life, especially in rural coastal villages. The Iñupiat participate in subsistence hunting activities in and around the Chukchi and Beaufort Seas. The animals taken for subsistence provide a significant portion of the food that will last the community through the year. Marine mammals represent on the order of 60-80 percent of the total subsistence harvest. Along with the nourishment necessary for survival, the subsistence activities strengthen bonds within the culture, provide a means for educating the younger generation, provide supplies for artistic expression, and allow for important celebratory events.

The MMPA requires that any harassment not result in an unmitigable adverse impact on the availability of species or stocks for taking (101(a)(5)(D)(i)(II)). Unmitigable adverse impact is defined as (50 CFR 216.103):

- An impact resulting from the specified activity that is likely to reduce the availability of the species to a level insufficient for a harvest to meet subsistence needs by:

- Causing marine mammals to abandon or avoid hunting areas;
- Directly displacing subsistence users;
- Placing physical barriers between the marine mammals and the subsistence users; and
- Cannot be sufficiently mitigated by other measures to increase the availability of marine mammals to allow subsistence needs to be met.

In the following sub-sections, the major animals used for subsistence by villages of the upper-west and north coast of Alaska are discussed (bowhead whale, beluga whale, and all three common species of seals (ringed, spotted, and bearded seals)).

Bowhead Whale

Anchor handling-related vessel traffic may traverse some areas used during bowhead harvests by Chukchi and Beaufort villages. Bowhead hunts by residents of Wainwright, Point Hope, and Point Lay take place almost exclusively in the spring prior to the date on which the vessels would commence the proposed anchor handling program. From 1984 through 2009, all bowhead harvests by these Chukchi Sea villages occurred only between April 14 and June 24 (George and Tarpley 1986; George *et al.*, 1987, 1988, 1990, 1992, 1995, 1998, 1999, 2000; Philo *et al.* 1994; Suydam *et al.*, 1995a,b, 1996, 1997, 2001a,b, 2002, 2003, 2004, 2005a,b, 2006, 2007, 2008, 2009, 2010), while vessels will not enter the Bering Sea (northbound) prior to July 1. However, fall whaling by some of these Chukchi Sea villages has occurred since 2010 and is likely to occur in the future, particularly if bowhead quotas are not completely filled during the spring hunt, and fall weather is accommodating. A Wainwright whaling crew harvested the first fall bowhead for these villages in 90 years or more on October 7, 2010, and another in October

of 2011 (Suydam *et al.*, 2011, 2012, 2013). No bowhead whales were harvested during fall in 2012, but 3 were harvested by Wainwright in fall 2013.

Barrow crews have traditionally hunted bowheads during both spring and fall; however, spring whaling by Barrow crews is normally finished before the date on which anchor handling operations would commence. From 1984 through 2011 whales were harvested in the spring by Barrow crews only between April 23 and June 15 (George and Tarpley 1986; George *et al.*, 1987, 1988, 1990, 1992, 1995, 1998, 1999, 2000; Philo *et al.*, 1994; Suydam *et al.*, 1995 a, b, 1996, 1997, 2001a, 2002, 2003, 2004, 2005a,b, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013). Fall whaling by Barrow crews does take place during the time period when anchor handling activities would be completed, with vessels out of the Chukchi Sea by the end of August. From 1984 through 2011, whales were harvested in the fall by Barrow crews between August 31 and October 30, indicating that there is potential for vessel traffic to affect these hunts. Most fall whaling by Barrow crews, however, takes place east of Barrow along the Beaufort Sea coast therefore providing little opportunity for the anchor handling program to affect them. For example, Suydam *et al.* (2008) reported that in the previous 35 years, Barrow whaling crews harvested almost all their whales in the Beaufort Sea to the east of Point Barrow. As all anchor sites are over 100 miles from Barrow, NMFS does not anticipate any conflict with Barrow harvest. In the event the sonar survey for Sivulliq is taking place as Barrow is harvesting, the Norseman II will traverse 50 mi offshore around Barrow.

Nuiqsut and Kaktovik crews traditionally hunt during the fall, harvesting in late August through September. The Alaska Eskimo Whaling Commission (AEWC) requires that all industry activities cease working east of 150° W by August 25th for the start of whaling for those communities. The anchor handling vessels will enter the Beaufort Sea as soon as ice at Point

Barrow allows for safe passage and will complete the Sivulliq anchor retrieval well before August 25th. If a sonar survey is required on this site, it will take place after the completion of the fall hunt and has been cleared by both communities.

Beluga Whales

Beluga whales typically do not represent a large proportion of the subsistence harvests by weight in the communities of Wainwright and Barrow, the nearest communities to the planned anchor handling project area. Barrow residents hunt beluga in the spring (normally after the bowhead hunt) in leads between Point Barrow and Skull Cliffs in the Chukchi Sea, primarily in April-June and later in the summer (July-August) on both sides of the barrier island in Elson Lagoon/Beaufort Sea (Minerals Management Service (MMS) 2008), but harvest rates indicate the hunts are not frequent. Wainwright residents hunt beluga in April-June in the spring lead system, but this hunt typically occurs only if there are no bowheads in the area. Communal hunts for beluga are conducted along the coastal lagoon system later in July-August.

Belugas typically represent a much greater proportion of the subsistence harvest in Kotzebue, Point Lay, and Point Hope. Point Lay's primary beluga hunt occurs from mid-June through mid-July, but can sometimes continue into August if early success is not sufficient. Point Hope residents hunt beluga primarily in the lead system during the spring (late March to early June), but also in open water along the coastline in July and August. Belugas are harvested in spring mid-June through mid-July in Kotzebue, but the timing can vary based on beluga movement. Belugas are harvested in coastal waters near these villages, generally within a few miles from shore. In the Chukchi, the anchor retrieval sites are located more than 60 mi (97 km) offshore, therefore proposed anchor handling in the project area would have no or minimal impacts on beluga hunts.

The retrieval of anchors around Kotzebue is located nearshore and has the most potential for disturbance to beluga harvest. Fairweather will be required to communicate with the Kotzebue Whaling Commission, AEWC, and Com Center (if established) during operations in this area to avoid any conflict. Vessels will move offshore if Fairweather is not cleared to conduct activities.

Disturbance associated with vessel traffic could potentially affect beluga hunts. However, all of the beluga hunt by Barrow residents in the Chukchi Sea, and much of the hunt by Wainwright residents would likely be completed before anchor handling activities would commence. Additionally, vessel traffic associated with the anchor handling program will be restricted under normal conditions to designated corridors that remain onshore or proceed directly offshore thereby minimizing the amount of traffic in coastal waters where beluga hunts take place. The designated vessel traffic corridors do not traverse areas indicated in recent mapping as utilized by Point Lay or Point Hope for beluga hunts, and avoids important beluga hunting areas in Kasegaluk Lagoon that are used by Wainwright.

Seals

Seals are an important subsistence resource and ringed seals make up the bulk of the seal harvest. Most ringed and bearded seals are harvested in the winter or in the spring before the anchor handling program would commence, but some harvest continues during open water and could possibly be affected by the planned activities. Spotted seals are also harvested during the summer. Most seals are harvested in coastal waters, with available maps of recent and past subsistence use areas indicating seal harvests have occurred only within 48-64 km (30-40 mi) of the coastline. The anchor handling retrieval sites are located more than 103 km (64 mi) offshore, so activities are thought to possibly have an impact on subsistence hunting for seals. Since most

seal hunting is done during the winter and spring when the anchor handling program is not operational, NMFS considers that the potential effects to seal hunting are largely avoided.

Mitigation measures to be implemented include participation in operational Com Centers (below). With these mitigation measures and the nature of the proposed action, we are confident that any harassment of seals resulting from the 2016 anchor handling program will not have an unmitigable adverse impact on the availability of seals to be taken for subsistence uses.

Plan of Cooperation or Measures to Minimize Impacts to Subsistence Hunts

Regulations at 50 CFR 216.104(a)(12) require IHA applicants for activities that take place in Arctic waters to provide a Plan of Cooperation (POC) or information that identifies what measures have been taken and/or will be taken to minimize adverse effects on the availability of marine mammals for subsistence purposes.

Fairweather has prepared a draft POC, which was developed by identifying and evaluating any potential effects the proposed anchor retrieving operation might have on seasonal abundance that is relied upon for subsistence use.

Specifically, Fairweather will take important time periods into consideration when planning its anchor retrieving operation, including the beluga whale subsistence activities near Kotzebue and in the Chukchi Sea, and bowhead whale subsistence activities in the Chukchi and Beaufort seas. Fairweather plans to enter the Beaufort Sea as soon as Point Barrow is ice-free and be finished at the Sivulliq location well before the August 25, 2016 commencement date of bowhead whaling. Although not anticipated with the proposed schedule, if crew changes are needed, they will occur at either Wainwright or Prudhoe Bay depending on the location of the vessel. Fairweather will work with the community of Wainwright through its joint venture with

Olgoonik Corporation. Through the establishment of village liaisons and onboard PSOs, Fairweather will ensure there are no conflicts with subsistence activities.

Fairweather has developed a communication plan and will implement this plan before initiating the anchor handling program. The plan will help coordinate activities with local Com Centers and thus subsistence users, minimize the risk of interfering with subsistence hunting activities, and keep current as to the timing and status of the bowhead whale hunt and other subsistence hunts. The communication plan includes procedures for coordination with Com Centers to be located in coastal villages along the Chukchi Sea during the proposed anchor handling activities.

Fairweather attended the AEWC meeting in Barrow from February 3-5 and presented the project components and developing mechanisms to work with the communities to present consistent and concise information regarding the planned anchor handling program. Fairweather intends to sign a Conflict Avoidance Agreement (CAA).

Throughout 2016, Fairweather will continue its engagement with the marine mammal commissions and committees active in the subsistence harvests and marine mammal research.

Endangered Species Act (ESA)

Within the project area, the bowhead, humpback, and fin whales are listed as endangered under the ESA. NMFS' Permits and Conservation Division engaged in consultation with staff in NMFS' Alaska Region Protected Resources Division under section 7 of the ESA on the issuance of an IHA to Fairweather under section 101(a)(5)(D) of the MMPA for this activity. In May 2016, NMFS issued a Biological Opinion concluding that the issuance of the IHA associated with Fairweather's anchor retrieval operations in the Chukchi and Beaufort seas during the 2016 open-water season is not likely to jeopardize the continued existence of the endangered bowhead,

humpback, and fin whales. No critical habitat has been designated for these species, therefore none will be affected.

National Environmental Policy Act (NEPA)

NMFS prepared an Environmental Assessment (EA) that includes an analysis of potential environmental effects associated with NMFS' issuance of an IHA to Fairweather to take marine mammals incidental to conducting anchor retrieval operations in the Chukchi and Beaufort seas. The draft EA was available to the public for a 30-day comment period before it was finalized. Based on the EA, NMFS made a Finding of No Significant Impact (FONSI) for this action. The FONSI was signed on June 30, 2016, prior to this issuance of the IHA. Therefore, preparation of an Environmental Impact Statement is not necessary.

Authorization

As a result of these determinations, NMFS has issued an IHA to Fairweather for the take of marine mammals, by Level B harassment, incidental to conducting anchor retrieval operations in the Chukchi and Beaufort seas during the 2016 open-water season, which also includes the mitigation, monitoring, and reporting requirements described in this Notice.

Dated: August 3, 2016.

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